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September 13, 1996

To: Delta Protection Commission

From: Margit Aramburu, Executive Director

Subject: Revised Staff Report on Proposed Adoption of Utilities and Infrastructure Policy P-3 in the Form of a Regulation as an Amendment to the Land Use and Resource Management Plan for the Primary Zone of the Delta. (Proposed P-3 Governs Siting of New Sewage Treatment Facilities and Areas for Disposal of Sewage Effluent and Sewage Sludge in the Primary Zone of the Delta.)

SUMMARY

The revised staff report is an update to the staff report which accompanied the proposal and staff recommendations on the regulatory proposal following review of the extensive comments received.

Staff is recommending adoption of the following regulatory language as proposed:

> New sewage treatment facilities (including storage ponds) and areas for disposal of sewage effluent and sewage sludge shall not be located within the Delta Primary Zone. [Note: The Rio Vista project, as described in the adopted Final Environmental Impact Report for such project, and the Ironhouse Sanitary District use of Jersey Island for disposal of treated wastewater and biosolids are exempt from this policy.]

Staff has reviewed all material submitted, and although many comments were submitted, staff believes that no alternative considered by the Commission would be more effective in achieving the Commission's objectives or would be equally effective but less costly or less burdensome to comply with and to enforce.

The Commission received many written and oral comments during the comment period. The Commission received copies of all the written comments in a packet dated April 12, 1996. In addition, the oral comments were presented in the minutes of the public hearings held on March 28, April 4, and April 8, 1996. A complete summary of all the comments and responses to the comments will be prepared and submitted to the Office of Administrative Law as part of the Final Statement of Reasons. The responses to comments will reflect the final action taken by the Commission, and thus are properly prepared after the Commission acts.

Presented in an attachment to this staff report are summaries of and responses to the **environmental** points raised during the review of the Commission's proposed action. These comments and responses are required for the Commission to make the required determinations about the possible impacts of the proposed action under the Commission's certified program for California Environmental Quality Act (CEQA) compliance.

The Commission received many written and oral comments which generally support adoption of the proposed regulation and Plan amendment from many individuals and groups.

The Commission also received written and oral comments which protest the adoption of the proposed regulation and Plan amendment for several reasons. Some comments raised concerns that the proposed regulation would penalize the existing Primary communities and prevent them from providing adequate wastewater treatment facilities to serve the communities now and in the future. The proposed language would prohibit new sewage treatment facilities, including storage ponds in the Primary Zone. The intent of the proposed language is to protect large areas of land currently used for agriculture, wildlife habitat, or recreation from conversion to sewage treatment facilities and/or holding ponds. The proposed language does not address, nor seek to restrict, modifications, upgrades, expansions, or similar changes to existing sewage treatment facilities to serve lands already zoned for residential development in and around the existing Delta communities.

One comment raised the concern that the proposed regulation would prevent new recreational development in the Primary Zone by preventing construction of new sewage treatment plants as part of such new development. The proposed regulation would restrict the type of wastewater facilities; however, a new project could be approved by local government consistent with the regional Plan if

it could install a septic tank or a holding tank consistent with local codes, or if it could connect to existing wastewater treatment facilities to provide adequate wastewater disposal.

Another comment suggested development of criteria which would allow disposal of sewage sludge in portions of the Primary Zone based on physical factors, such as the depth to groundwater, type of soils, surface elevation, etc (see Attachment to written comments from Craig Johns, 3/27/96). The suggested criteria would apply to an area which closely parallels the boundaries of the Primary Zone of the Delta. However, the suggested criteria would be impractical and confusing to implement, expensive to apply and to maintain, and difficult to monitor and enforce. The staff recommendation represents a conservative approach to protection of the Delta's sensitive resources including the Delta's ecology, fish and wildlife populations, recreational opportunities, and economic productivity.

If the Commission is prepared to adopt the regulation and Plan amendment, the Commission should vote, by a roll call vote to adopt the attached draft resolution. The proposed regulation and Plan amendment must be approved by the majority of the Commission (ten members).

Attachments:

References used in preparation of the Staff Report.

List of Special Status Species Known or Potentially Known to Occur in the Sacramento-San Joaquin Delta.

Map of the Delta Primary and Secondary Zones.

Draft Resolution.

Comments and Responses to Environmental Points.

STAFF REPORT

I. BACKGROUND

In February, 1995, the Delta Protection Commission (Commission) adopted the Land Use and Resource Management Plan for the Primary Zone of the Delta (Plan) which included Utilities and Infrastructure Policy P-3 (P-3). That policy stated:

> New sewage treatment facilities (including storage ponds) and areas for disposal of sewage effluent and sewage sludge shall not be located within the Delta Primary Zone. [Note: The Rio Vista project, as described in the adopted Final Environmental Impact Report for such project, and the Ironhouse Sanitary District use of Jersey Island for disposal of treated wastewater and biosolids are exempt from this policy.]

The Commission was sued by Wheelabrator Clean Water Systems, Inc., Bio Gro Systems Division in Sacramento County Superior Court. The issue in the case was whether P-3 was a "regulation" subject to the provisions of the Administrative Procedure Act (APA). The APA requires that regulations adopted by State agencies be reviewed and approved by the Office of Administrative Law before they may take effect.

The Sacramento County Superior Court ruled on November 14, 1995, that P-3 constitutes a "regulation" under the APA. The Court's decision applied to P-3 only. The Court declared P-3 to be invalid "for a substantial failure to comply with the APA". The Commission agreed to abide by the Court's ruling (rather than file an appeal), and to "set aside" P-3.

In compliance with the APA, the Commission is proposing the single action of adopting a Plan amendment in the form of a regulation.

The Commission issued a notice of the proposed adoption which was published on Friday, February 23, 1996 in the Sacramento Bee and the Stockton Record. The notice provided for a public comment period from February 23, 1996 and ending April

8, 1996.

The Commission was required to hold three duly noticed public hearings. The three public hearings were held: (1) Thursday, March 28, 1996 at 6:30 p.m. at Jean Harvie Community Center, 14273 River Road, Walnut Grove; (2) Thursday, April 4, 1996 at 10:00 a.m. at the Roberts Island Union Farm Center, 4925 W. Howard Road, Roberts Island; and (3) Monday, April 8, 1996 at 10:00 a.m. in the Theater at the Antioch Community Center 213 F Street, Antioch.

If adopted by the Commission by a majority of its membership (ten votes), the regulation will be submitted to OAL for its review and approval. The regulation would take effect 30 days after the OAL approves it, unless an earlier effective date is approved.

For purposes of CEQA compliance, the Commission operates under its certified program, which authorizes it to use its planning documents in lieu of preparing separate negative declarations or environmental impact reports (Pub. Res. Code Section 21080.5; 14 C.C.R. 15251(n); 14 C.C.R. Sections 20015-20021). To meet CEQA requirements, the Commission document must analyze potentially significant adverse environmental impacts which may result from the proposal, analyze feasible alternatives and mitigation measures to minimize any significant adverse environmental impacts, address short-term and long-term effects on the environment, and address growth-inducing effects and potential cumulative impacts. All environmental points raised by commenters on the proposal must be summarized and responded to in a report to the Commission. The summary of and response to environmental points must be approved by the Commission prior to adoption of the proposal. Based on its review of the record before it, the Commission must determine if the proposed action may result in significant adverse environmental impacts.

II. EXISTING FEDERAL REGULATIONS

The U.S. Environmental Protection Agency (EPA) has adopted regulations on the content and handling of sewage sludge (40 C.F.R., Part 503 "Standards for the Use or Disposal of Sewage Sludge"). The regulations address general requirements, pollutant limits, management practices and operational standards for the final use or disposal of sewage sludge generated during treatment of domestic sewage in a treatment works (Section 503.1). The EPA regulations identify and regulate sewage sludge as a "waste" and specify maximum contaminant concentrations based on limited sampling for only a few of the possible contaminants

contained in typical sewage sludge. The EPA regulations are not land use policies or determinations, nor are they site or area specific.

The EPA regulations include broad, general criteria for reviewing possible site suitability. For example, sewage sludge cannot be applied if it is likely to adversely affect a threatened or endangered species or its designated habitat (40 C.F.R. Section 503.14(a)); sewage sludge cannot be applied to agricultural land that is flooded so that the sewage sludge enters a wetland or waters of the United States (40 C.F.R. Section 503.14(b)); and sewage sludge cannot be applied to agricultural land that is ten meters or less from waters of the United States (40 C.F.R. Section 503.14(c)). The EPA regulations do not address characteristics of the soil, the surface elevation of the site, location in a flood plain, depth to groundwater, and many other factors with wide variability from site to site. The EPA regulations do not constitute an affirmative indication that specific sites are suitable. They represent a "minimum" criteria, to be applied along with State and local requirements.

The EPA regulations expressly recognize that State and local governments have the authority to impose more stringent requirements, or to impose additional requirements for the use or disposal of sewage sludge (40 C.F.R. Section 503.5(b)). State authority exists for prescribing additional restrictions on land uses that may have an adverse impact on water quality. The federal regulations recognize that State and local governments may impose requirements for the use or disposal of sewage sludge when necessary to protect public health and the environment from any adverse effect of pollutants in the sewage sludge (40 C.F.R. Section 503.5(a)).

III. PROPOSED ACTION.

A. Text of the Proposed Regulation

The text of the proposed regulation (the same as the language previously adopted as P-3) states:

> New sewage treatment facilities (including storage ponds) and areas for disposal of sewage effluent and sewage sludge shall not be located within the Delta Primary Zone. [Note: The Rio Vista project, as described in the adopted Final Environmental Impact Report for such project, and the Ironhouse Sanitary District use of Jersey Island for disposal of treated wastewater and biosolids are exempt from this policy.]

B. Plan Amendment

The Commission would incorporate the proposed regulation, if adopted, into the Plan as an amendment. The language would apply throughout the Primary Zone (see attached map), and affect all local governments with lands in the Primary Zone. Local governments would need to ensure that their general plans are in compliance with, and would need to ensure that new projects conform to the amended language.

It should be noted that San Joaquin County, which includes about 38% of the Primary Zone, has already adopted a General Plan policy which precludes placement of sewage effluent and sewage sludge in the Delta Primary Zone within San Joaquin County. Solano and Yolo County have proposed adoption of language into their respective General Plans that would ensure that all new projects would be in conformance with the Delta Plan; Contra Costa County recently adopted a similar General Plan amendment (July 23, 1996).

The proposed Plan amendment would be included in the Utilities and Infrastructure section of the Plan, following P-2.

The language in P-3 was included in the Plan when it was adopted in early 1995, after several public hearings before the Commission. At the hearings, public testimony was submitted to the Commission about possible adverse environmental and economic effects from sewage sludge and effluent disposal, also described as land application of sewage sludge and/or sewage effluent, and potential cumulative impacts to the Delta agricultural lands and wildlife habitat which may be associated with use of these lands for disposal of sewage effluent and/or sewage sludge.

IV. PURPOSE AND EFFECT OF PROPOSED REGULATION

A. Purpose and Effect of the Proposed Regulations.

The purpose of the regulation is to protect Delta Primary Zone land uses including agriculture, wildlife habitat, and recreation from displacement from construction of new sewage treatment facilities including storage ponds. The purpose of the regulation is also to protect Delta Primary Zone natural resources, including soil, surface water, groundwater, wildlife and riparian habitats, from possible contamination by materials associated with placement of sewage effluent and sludge on agricultural lands. The materials of concern include viruses, bacteria, metals, and salts.

The Commission's authority for adoption of the proposed regulation is found in the Delta Protection Act, which states "the commission shall prepare and adopt...and thereafter review and maintain a comprehensive long-term resource management plan for land uses within the primary zone of the delta...The regional plan shall meet the following requirements:...(2) Conserve and protect the quality of renewable resources. (3) Preserve and protect agricultural viability...(5) Preserve and protect delta dependent fisheries and their habitat. (6) Preserve and protect riparian and wetlands habitat, and promote and encourage a net increase in both the acreage and values of those resources on public lands and through voluntary cooperative arrangements with private property owners. (7) Preserve and protect the water quality of the delta, both for in stream purposes and for human use and consumption. (8) Preserve and protect open-space and outdoor recreational opportunities...(12) Protect the delta from any development that results in any significant loss of habitat or agricultural land" (Pub. Res. Code, Section 29760).

The Act states that "the resource values of the delta have deteriorated, and that further deterioration threatens the maintenance and sustainability of the delta's ecology, fish and wildlife populations, recreational opportunities, and economic productivity" (Pub. Res. Code, Section 29706). The Act directs the Commission to undertake "regulation of land use and related activities that threaten the integrity of the delta's resources...through comprehensive land use planning implemented through reliance on local government in its local land use planning procedures and enforcement" (Pub. Res. Code, Section 29709(a)).

The Act also states "the commission shall adopt its own rules, regulations, and procedures necessary for its organization and operation" (Pub. Res. Code, Section 29752).

The effect of the regulation will be to preclude construction of new sewage treatment facilities and holding ponds in the Primary Zone thus allowing the existing Primary Zone land uses of agriculture, wildlife habitat, and recreation to continue. The proposed regulation also will preclude location of new disposal areas for sewage effluent and sewage sludge in the Primary Zone, again resulting in continuation of existing land uses in the Delta Primary Zone under management practices which will help to protect the renewable resources of the Delta from possible contamination or degradation by these materials.

B. Exempted Projects

The exemption language in the proposed regulation would

allow construction of two projects in the Primary Zone, as described in the regulation. These exceptions are treated by the proposed action as "grandfathered" projects. That is, the proposed language treats these projects as already approved activities, since each has already been analyzed under CEQA in a certified Final Environmental Impact Report (FEIR), and each has been approved based on the limitations described in a FEIR, with substantial local mitigation requirements and findings by the appropriate agencies. The projects exempted from the regulatory proposal are a new sewage treatment plant in Rio Vista and disposal of sewage effluent and sewage sludge on Jersey Island.

The proposed Rio Vista sewage treatment facility, including storage ponds, would be located in the Primary Zone on lands within the City of Rio Vista, west of the Sacramento River and northeast of Highway 12. The facility is proposed on lands which are between 10 and 20 feet above sea level, are not in a flood plain, are not prime soils, are used for grazing, and is not irrigated. No sewage sludge or sewage effluent will be disposed in the Primary Zone; the effluent will be used to irrigate new nearby golf courses or will be discharged into the Sacramento River, subject to approval by the Regional Water Quality Control Board. The sludge will be placed in a landfill outside the Delta Primary Zone.

The Ironhouse Sanitary District is proposing to enlarge its treatment plant outside of the Primary Zone and to dispose of both sewage effluent and sewage sludge on approximately 2,600 acres of land in the Primary Zone on Jersey Island, in Contra Costa County; the District owns about 2,900 acres. The environmental document for this project describes the service area, the location and capacity of the future expansion of the treatment facility, and the crops that could be grown on Jersey Island. The disposal site is isolated from other islands used for agriculture. The District has also left open the option of further treatment of the sewage effluent and release directly into the San Joaquin River, subject to approval by the Regional Water Quality Control Board.

Each of these projects is described in a final environmental impact report and is subject to the limitations imposed by the final environmental impact report, any conditions of approval, and any subsequent permits (Final Environmental Impact Report for Ironhouse Sanitary District Wastewater Facilities Plan and Delta Environment Science Center, 10/94, and Rio Vista Northwest Area Wastewater Treatment Plant Final Environmental Impact Report, 3/92). The projects are located at the far western edge of the Primary Zone adjacent to the largest portions of the two biggest waterways in the Primary Zone, waterways with the greatest water

circulation and flushing action within the Primary Zone.

C. Need for the Proposed Regulations

The proposed regulation is needed to protect Delta resources and to address the following conditions and concerns:

1. Soils and Hydrology

Due to unique soil conditions and hydrology, much of the Primary Zone is at constant risk of flooding and/or inundation. The entire Delta, as defined by Water Code Section 12220, has been described as a mat of peat soil floating atop a large pool of water. Much of the Primary Zone is actually below sea level (DWR, Delta Atlas, 1993, p 28) and is protected by levees from daily inundation. Many areas of the Primary Zone must be vigorously drained and pumped to keep the groundwater table below the surface of the land and to avoid flooding. This means that most of the Primary Zone is continuously subject to potential flooding if pumping were to cease or a levee break were to occur.

There have in fact been repeated, historic, levee breaks on Delta islands (DWR, Delta Atlas, 1993, pp 46 and 48), and flood flows may be difficult to predict. Two small islands (Little Mandeville and Fern) flooded in 1995. Levee breaks can result from various causes including overtopping, erosion by floodwater, weak spots (beaver burrows, fallen root tree balls) and others (DPC, Background Report on Levees, 1994). The Delta levees are also susceptible to failure due to seismic activity (DPC, Background Report on Levees, 1994). In the case of a levee break or rising groundwater soon after placement of sewage effluent and/or sewage sludge, flood waters would carry off materials placed on the island's surface and contaminate other land and water areas. Lands in the Yolo Bypass are subject to flowage easements specifying that they may be flooded without notice. Such flooding could occur for a variety of reasons, including if there is surplus upstream flow which could result from flooding or dam failure. However, the Central Valley Regional Water Quality Control Board (CVRWQCB) has not imposed any special restrictions regarding application of sewage sludge or sewage effluent in such areas. The CVRWQCB general order on sewage sludge application was rescinded by the State Water Resources Control Board in part for failure to consider sensitive resources of the Delta Primary Zone.

In addition to the low surface elevation, high groundwater table, and location in the flood plain, the widespread presence of subsidence-prone soils make lands in the Primary Zone

inappropriate sites for new sewage treatment plants or associated storage ponds. An unforeseen catastrophic event could result in release of raw or partially treated sewage and/or effluent from a new sewage treatment plant located in the Delta Primary Zone with possible associated threats to environmental resources and/or public health.

The Delta also represents a unique hydrologic regime due to the below sea level land surface elevation and the dynamic inter-relationship of surface water and groundwater. Delta areas characterized by high percentage peat soil have subsided below sea level, with many areas more than 15 feet below sea level (DWR, Delta Atlas, p. 28). In these areas the groundwater would naturally be approximately equal to sea level elevation. Depending on the human controlled pumping regime for a below sea level island, the surface water can easily commingle with groundwater. For example, in the late fall and winter, historically, land managers stop pumping and allow the fields to flood to control subsidence, to control weeds, and to provide seasonal wildlife habitat (DPC, Background Report on Agriculture, p. 42). In these periods, surface water commingles with groundwater. If one island is under several different property managers, the practices of one manager necessarily affect nearby lands due to hydrological interconnectivity. If one manager seeks to keep his lands "dry" by pumping through the winter months and a nearby manager floods his lands, the effects on the "dry" lands are unpredictable, and may be burdensome, and may be expensive to remedy, for example for additional costs for electricity to run pumps. In addition, on some islands crops are "sub-irrigated" (DPC, Background Report on Delta Water Uses, 1994). This means the groundwater is allowed to rise to an elevation below the surface of the site to provide moisture to the crop root zone. Any excess waters are drained into the numerous ditches which criss-cross the islands and which allow excess water to flow toward a discharge pipe at the lower elevation portion of an island.

The CVRWQCB staff indicates that for each proposed project it will require no discharge of tailwater or field runoff within 30 days after application of Class B biosolids where biosolids have not been incorporated into the soils or there is not enough vegetation to prevent movement of biosolids particles from the site (CVRWQCB, Waste Discharge Requirements General Order for Reuse of Biosolids and Septage on Agricultural, Forest, and Reclamation Sites, 1995). The conditions and limitations which were contained in the now-rescinded CVRWQCB General Order are still in use by the staff in the review of Individual Waste Discharge permits for new sludge application projects.

The EPA regulations do not contemplate areas like the Delta Primary Zone, where the exchange between surface water and groundwater is common. Runoff from, or releases associated with application of sewage effluent and sewage sludge could have an adverse effect on aquatic values in the Delta Primary Zone and on agricultural productivity of adjacent lands. The entire Delta, as defined in Water Code Section 12220, and which includes all of the Primary Zone, has been declared critical habitat for the endangered Delta smelt (Hypomesus Transpacificus)(U.S. Fish and Wildlife Service, Federal Register, 1994).

Numerous studies and reports indicate that pathogens, such as bacteria, virus, and parasites, remain in sewage sludge and can affect human health (see for example: Hunt, "Pathogens in Sewage Sludges and Sludge-Amended Soils", 1993). Pathogens can migrate through soil into groundwater used for domestic purposes when sewage effluent has been applied to land in a liquid state resulting in a possible health threat. Once in groundwater, pathogens may travel significant distances from the site (Straub, et al, "Hazards from Pathogenic Microorganisms in Land-Disposed Sewage Sludge", 1993). Nitrates have been identified as a key potential problem, especially to groundwater drinking water supplies (groundwater is the primary drinking water supply for residents of the Delta Primary Zone) (CVRWQCB, Waste Discharge Requirements General Order for Reuse of Biosolids and Septage on Agricultural, Forest, and Reclamation Sites, 1995).

The EPA regulations address the general suitability of potential sites for disposal of sewage effluent and/or sewage sludge, but the restrictions are minimal. Neither the federal regulations nor the CVRWQCB General Order address the unique geographic, hydrologic, and topographic situations found in the Delta Primary Zone. For example, the EPA regulations generally prohibit application of bulk sewage sludge to sites that are flooded to keep bulk sewage from entering wetlands or other waters of the United States (40 C.F.R. Section 503.14(b)). The federal regulations do not, however, address sites that due to their unique geography and hydrology are constantly subject to a substantial flood risk (DWR, Delta Atlas, p. 28) and that could become flooded due to accident, mechanical failure, or an emergency situation.

The EPA regulations prescribe setbacks from surface waters and prohibit application to sites that are 10 meters or less from the waters of the United States (40 CFR Section 503.14(c)). The existing regulations simply do not address a situation such as the Delta islands that are laced with man-made waterways and ditches which constantly carry water around the islands. Nor do they contemplate pumps which must work year-round to keep the

islands from being inundated.

The EPA regulations generally prohibit surface disposal sites in "unstable areas". Some Delta Primary Zone island levees have been deemed unstable due to possible liquefaction of the base of levees built atop peat soils (DPC, Background Report on Levees, 1994) and due to high rates of subsidence of peat soils that has resulted in the surface of almost all of the Primary Zone being below sea level. The surface elevation of some islands is as much as 20 feet below sea level (DWR, Delta Atlas, p. 28).

The EPA regulations do not address significant variations in soil characteristics and address only a few of the compounds and elements which may be contained in sludge. There has been insufficient research into the effects and fate of sludge, and the metals and chemicals contained in sludge, when added to specific soils types, particularly soils high in organic content, and subject to repeated applications (Babish, "Health Risks Associated with the Organic Fraction of Municipal Sewage Sludges, 7/1/93; and Lesser, et al, "Roundtable Report of the Subcommittee on General Risk Assessment", 1/95). For example, a given level of metal or other potential toxicant applied to one soil type may be relatively safe, but in other soils of coarser texture, lower pH, varying background concentrations of metal, salinity, etc., this level could harm soil productivity, groundwater quality, or other aspects of the environment. EPA studies did not address effects of combined concentrations of metals and chemical residues applied to agricultural lands over a long term (CVRWQCB Staff Report on General Waste Discharge Requirements for Biosolids and Septage and Waiving Waste Discharge Requirements for Exceptional Quality Biosolids, 5/26/95; Response to Comments). Recent studies on sandy soils in San Diego indicated that sewage sludge applications to agricultural test plots resulted in increased salinity concentrations and metal concentrations. The Delta Primary Zone is a unique area where much of the soil is peat soil with high organic content, a result of lands having been reclaimed from tidal wetlands.

2. Unique Delta Wetlands Ecosystem.

The Delta Primary Zone is a unique and fragile wetland ecosystem providing year round and seasonal habitat. The area is large, 450,000 acres in the Primary Zone, and is recognized as a key segment of the Pacific Flyway for migratory birds, as well as habitat for 71 "special status" species of plants birds, mammals, reptiles, amphibians, invertebrates, and fish (see Appendix E of Department of Fish and Game, SB 34 Delta Levees Master Environmental Assessment, 1995). Of the 71 "special status

species", there are 11 rare, endangered, or threatened species including plants, birds, mammals, reptiles, insects, and fish. "Special status" is a catch-all phrase used in the MEA which refers to species that are protected under the provisions of the federal Endangered Species Act and the California Endangered Species Act. These species live in all areas of the Delta Primary Zone from the waterways, to tidal areas, to levee berms, to agricultural lands. The U.S. Fish and Wildlife Service designates almost all of the land area in the Primary Zone as "farmed wetlands".

The criteria in the EPA regulations regarding sewage sludge very minimally address possible harm to wildlife and wildlife habitat from long-term application of sewage sludge. Disposal of sewage sludge and sewage effluent over long periods of time may result in concentrations of compounds and heavy metals to a level where they could impact seasonal wildlife use on agricultural lands. The standards set for selenium (ceiling concentration 100 milligrams per kilogram-dry weight basis; cumulative pollutant loading rate of 100 kilograms per hectare, or monthly average concentrations of 36 milligrams per kilogram-dry weight basis (40 CFR Section 503.13)) do not contemplate the intensive seasonal waterfowl feeding and roosting use of Primary Zone agricultural lands. Possible impacts should be studied far more thoroughly to determine if deposition of these levels of selenium, or other materials, may have an adverse impact to wildlife or wildlife habitat.

Construction of new sewage treatment facilities and storage ponds would displace large areas of agriculture or wildlife habitat. Agricultural lands also provides seasonal wildlife habitat values which would be lost.

In addition to providing critical habitat for rare and endangered species, almost two-thirds of the State's population obtain at least some of their drinking water from or through the Delta (DPC, Background Report on Water, 1994). Land application of sewage effluent and/or sewage sludge in the Primary Zone of the Delta poses risks of adverse impacts to drinking water quality from the potential escape or release or runoff of sewage effluent, sewage sludge, or associated contaminants into the Delta water "pool". There is a constant effort to maintain and/or improve the water quality in the Delta waterways through control over Delta land uses, urban nonpoint source discharges, close monitoring of urban wastewater discharges into the Delta, testing and monitoring of pesticide discharges from agricultural drains, etc. General use of sewage effluent and sewage sludge in the Delta Primary Zone could result in additional contaminants which would adversely affect overall water quality.

The Commission's proposed regulation represents a cautious approach toward protecting Delta Primary Zone land resources from accumulation of surplus amounts of potentially harmful materials and contaminants found in sewage sludge and/or sewage effluent, such as heavy metals, trace materials, salts, and pathogens. Cumulative amounts of these materials could have an adverse impact on sensitive habitat areas.

There is a direct relationship between land use and water quality, and between water quality and land uses (DPC, Background Report on Delta Water Issues, 1994). Releases of water from specific land uses, such as sewage treatment plants, power plants, and other industries that release wastewater, are regulated by the Regional Water Quality Control Boards through the National Pollution Discharge Elimination System under the federal Clean Water Act. These discharges may affect temperature, salinity, and other components of water quality. Stormwater runoff from urban and industrial areas contains pesticides, oil, grease, and heavy metals, which can contribute to water quality degradation. Stormwater runoff flows untreated into surface waters. Water in the Primary Zone waterways is used for a variety of uses including municipal and domestic water supply, water contact recreation, agricultural water supply, freshwater habitat, fish migration, etc. Each of these beneficial uses requires certain levels of water quality characteristics such as salinity, temperature, bacteria, dissolved oxygen, pH, pesticides, and turbidity to meet the prescribed beneficial uses as prescribed by the Basin Plan for the region. If Delta waters are too salty, they will not be suitable for agricultural uses and certain industrial uses; if Delta waters are too warm, they will be unsuitable for fish migration; if Delta waters contain too many bacteria, they will be unsuitable for water contact recreation.

In addition, the low surface elevation, high groundwater table, location in the flood plain, and/or soils subject to subsidence make lands in the Primary Zone particularly inappropriate as sites for new sewage treatment plants or associated storage ponds. An unforeseen catastrophic event could result in release of raw or partially treated sewage and/or effluent with possible associated environmental and/or public health degradation.

3. Potential Adverse Impacts on Delta Agricultural Lands.

Disposal of sewage effluent and/or sewage sludge results in disposal of materials containing salts, metals, and other contaminants on a site. These materials are not typically removed during secondary or tertiary treatment of municipal

wastewater. These materials may build up over time, resulting in potential cumulative adverse impacts to cultivated crops due to bioaccumulation, concentration of metals in soils, and increased salinity. Construction of new sewage treatment plants would directly displace agricultural use of Delta Primary Zone lands with hard surfaced parking lots and driveways, administration buildings, labs, storage sheds, and treatment tanks and facilities. In addition, extensive areas of productive agricultural land could be converted to lagoons and/or ponds for treatment and/or storage of liquid materials, absent the proposed action. Additional acreage may be needed for storage of dry materials.

Similarly, if metals are over-applied to agricultural lands through use of sewage sludge, the result can be ground pollution, toxicity to plants, build-up of metals in plant tissues and transmission of metals into the food chain. The EPA regulations allow maximum concentrations of metals in sludge to be placed on agricultural lands without regard to local soil and water characteristics. Concerns have been raised by commenters that the EPA rules allow long-term accumulation in soils of metals such as chromium, cadmium, copper, lead, mercury, nickel, selenium, and zinc to levels from 10 to more that 100 times the present background concentrations in most soils.

In addition, a key factor to agricultural land managers is the fact that some members of the public and some major food processors in California have indicated that they will not purchase agricultural products grown on lands where sewage sludge has been used (Del Monte, 1995; Tri Valley Growers, 1993; Tri Valley Growers, 1994). In addition, foods grown for export are under extra scrutiny and may have to pass stricter requirements than allowed under the EPA regulations. Certified organic farmers are not allowed to use or dispose of sewage sludge and/or sewage effluent on their farms. In the Delta where parcels of land on one island, or even on adjacent islands, the hydrological interconnectivity of the sites may result in the practices of one land manager affecting adjacent lands and crops. Thus, there are compelling economic reasons to prohibit disposal of sewage effluent and sewage sludge in the Delta Primary Zone, a region know for its unique and valuable agricultural products.

Much of the land in the Delta Primary Zone is already characterized by high salinity levels. Salts enter the South Delta Primary Zone lands from a variety of sources. In low water flow times of the year, such as later summer and fall, and particularly in times of drought when river flows are critically low, the groundwater is subject to intrusion of salty (brackish) water from San Francisco Bay (DWR, Delta Atlas, pp. 23; and

"Central California Regional Water Recycling Project Step 1 Feasibility Study/Executive Summary for Administrative Draft Report", 7/12/95). In addition, salts are released from agricultural drains, from the South Delta Primary Zone lands themselves, but particularly from agricultural lands south of the Delta on the west side of the San Joaquin Valley. These agricultural lands naturally contain high levels of salts and when irrigated, the agricultural drainage water containing these salts drain into the San Joaquin River which flows north into the Delta. These salt laden waters are the source of irrigation water for the South Delta Primary Zone farmers. Salts are not generally removed from sewage effluent or sewage sludge in primary, secondary or even tertiary treatment. Special, expensive treatment is needed to remove salts from wastewater. Thus placement of these materials on the Delta Primary Zone lands would add salinity to the soils, could increase water supply needs to leach salts from the soils, and would add to an already identified problem and result in potential adverse impacts.

Construction of new sewage treatment facilities and storage ponds would displace large areas of agriculture in order to provide adequate areas for buildings, structures, tanks, warehouses, driveways and parking areas, storage ponds, and other needed facilities.

4. Wildlife Habitat on Agricultural Lands.

Lands and waters in the Primary Zone of the Delta serve as year round and seasonal wildlife habitat for numerous species of shoreline and migratory birds, ducks and geese, sandhill cranes, and others. Wildlife and wildlife habitats could be adversely affected by sewage effluent and/or sewage sludge application in the Primary Zone of the Delta. Construction of new sewage treatment plants or storage ponds would displace habitat, possibly for rare, threatened, or endangered species.

Several of the species of threatened birds identified in the Delta (DFG, SB 34 Master Environmental Assessment, 1995) traditionally feed in Delta agricultural fields in summer (Swainsons hawk) and winter (Sandhill crane). In addition, others of the identified 71 "special status" species of plants, birds, mammals, reptiles, amphibians, invertebrates, and fish in the Delta and 11 rare, endangered, or threatened species of plants, birds, mammals, reptiles, and insects use Delta agricultural lands for parts of their habitat (DFG, SB 34 Master Environmental Assessment, 1995). There was apparently little analysis of impacts to seasonal waterfowl feeding and resting on flooded agricultural fields which may have been the site of sewage sludge or sewage effluent disposal in preparation of the

EPA regulations (CVRWQCB Staff Report on General Waste Discharge Requirements for Biosolids and Septage and Waiving Waste Discharge Requirements for Exceptional Quality Biosolids, 5/26/96; see responses to comments).

There is additional concern that migratory birds would be attracted to sewage treatment facility treatment ponds or holding ponds within the flyway which would not be suitable habitat areas.

It should be noted that the State of California is pursuing an aggressive program of developing and/or restoring wetland habitats and ecosystems in the State. The State's goal is an additional 225,000 acres to be acquired, restored and enhanced by the year 2010. To date, since 1993, 78,000 acres have been restored (California Planning and Development Report, "Wetlands Acreage Up", February, 1996). About half of the restoration sites are now agricultural lands in the Central Valley flyway areas. Additional agricultural lands are being considered by State and federal agencies for flooding for aquatic habitat in the Delta Primary Zone (Corps, Reconnaissance Report for Prospect Island, 1995; Corps, Reconnaissance Plan for Little Holland and Liberty Island, 1996).

Other lands in the Primary Zone are currently being evaluated as part of the CALFED program for possible channel widening and habitat enhancement; these are lands currently in agricultural use. Concentrations of pathogens, heavy metals, salts and other materials inherent in sewage effluent and sewage sludge could have adverse impacts on wetland ecosystems, riparian habitat, and wildlife food chains, and possibly affect rare, threatened, or endangered species in these areas.

Of the 450,000 acres of land in the Primary Zone of the Delta, approximately 60,000 acres of agricultural lands are in the planning process (environmental document or reconnaissance document has been prepared) to be converted to reservoirs or wetland habitat areas in the near future. Additional lands in the Primary Zone are in preliminary levels of study and evaluation for enhancement.

D. Alternatives to the Proposed Regulation.

Alternatives to the proposed regulation that were considered include: (1) not adopting the proposed regulation and Plan amendment, which would leave regulation of the use of sewage effluent and sewage sludge with the U.S. Environmental Protection Agency, the California Regional Water Quality Control Boards, and local governments; and location of new sewage treatment

facilities, including storage ponds to special districts, local governments and the Regional Water Quality Control Boards; (2) adopting a revised regulation and Plan amendment which would allow placement of sewage effluent and sewage sludge in some parts of the Delta Primary Zone based on alternate criteria specifying surface elevation requirements (i.e. not subject to flooding if a levee breaks), sufficient depth to natural groundwater level to preclude possible contamination (groundwater elevations in the Primary Zone are artificially controlled by pumping), or soil characteristics (high organic content); or (3) adopting a revised regulation and plan amendment to delete the language which prohibits new sewage treatment plants in the Primary Zone.

The first alternative would not be effective in meeting the Commission's statutory mandate to preserve and protect Primary Zone resources including renewable resources, agricultural viability, fisheries, and water quality of surface water and groundwater. Significant concerns have been expressed by land managers, produce buyers, food processors, and others indicating that the disposal of sewage effluent and sewage sludge would have cumulative adverse impacts to the Delta Primary Zone. There have been several proposals from the special districts to create new dedicated sites for disposal of sewage effluent and/or sewage sludge to serve: Tracy (Heinz proposal), Mountain House New Town Project, the City of Lathrop, Ironhouse Sanitary District, and the City of Stockton. In addition, there has been interest from treatment facilities in Fairfield-Suisun, the Sacramento Regional Wastewater Treatment Facility and others to dispose of treated sewage sludge on agricultural lands in the Primary Zone. A consortium of Bay Area wastewater treatment facilities has prepared and released a study which proposed disposing very large volummes of sewage effluent on Delta lands including Primary Zone lands.

The second alternative noted above would be less effective in meeting the Commission's mandates and more expensive and more burdensome to those who would need to comply with it. It would entail substantial additional difficulty in implementation and substantial additional costs to landowners, disposal contractors, wastewater treatment facilities, and local government entities. Current information is neede, however there is no current deltawide elevational information for lands in the Primary Zone; existing map elevation base data is up to 40 years old, many with updates 20 years old (see U.S. Geological Survey Quadrangle Maps). There have been major changes in land surface elevation in that time period due to subsidence. While general soils information is available, detailed soils information, which is not currently available, would have to be mapped and verified

with testing and sampling on each site. Numerous soil samples tests would be required before a project could be designed and would need to be periodically re-tested to evaluate fluctuations. In addition, the groundwater elevation would have to be mapped, verified, and continuously monitored to ensure season-long conformance with required groundwater elevations. Given unpredictable changes in groundwater levels and the effect of widespread pumping on groundwater levels, it would be difficult to ensure that any required depth to groundwater criteria could be consistently met.

The third suggested alternative would leave large tracts of agricultural, open space, and wildlife lands open to development for sewage treatment facilities and holding ponds. The existing communities in the Primary Zone, with the exception of Clarksburg in Yolo County, all already have community sewage treatment facilities (Walnut Grove, Locke, Hood, Courtland, Terminous). Clarksburg also has a community wastewater treatment facility which consists of septic tanks at each "urban" lot. New development in Clarksburg consistent with the "urban" designation would require adequate sewage treatment capacity as part of the proposed project. Growth in these communities has been modest, but continuous and can be accommodated by upgrading or enhancing the existing treatment facilities.

Currently there are holding ponds in the Primary Zone which support treatment facilities serving part of Thornton and the City of Stockton. The Delta Protection Act recognizes existing facilities (P.R.C. Section 29723(b)(11)). During the past three years the Commission has been monitoring proposed projects, Mountain House, a new town in San Joaquin County, did propose to construct storage ponds for treated wastewater in the Primary Zone, but the proposal was eliminated from the approved project.

Approval of new recreational developments in the Primary Zone must ensure that wastewater can be adequately treated. Adequate treatment to protect public health, safety, and welfare would a part of the overall project analyzed and approved or denied by local governments.

Not adopting the proposed regulation and Plan amendment would potentially allow such environmentally harmful activity to proceed in portions of the Primary Zone where not precluded by local governments. San Joaquin County has already adopted a General Plan policy which precludes placement of sewage sludge and sewage effluent in the Delta Primary Zone (approximately 38% of the Primary Zone). Yolo County is currently developing a County ordinance to address regulation of such activities. Contra Costa County says it has never received such an

application for disposal of sewage sludge in the Primary Zone (Note the Ironhouse Sanitary District Project has not yet applied for any local permits). Both Solano County and Sacramento County, however, indicate industry interest in disposal of effluent and/or sludge in the Delta Primary Zone.

Adoption of a different regulation and Plan amendment which more specifically defines areas for disposal of sewage effluent and sewage sludge would nonetheless leave very few if any sites eligible for such use. This is because most of the Primary Zone is in the 100 year flood plain as defined by the Federal Emergency Management Agency (FEMA) and is constantly subject to flooding due to levee failure, has a very high natural water table, is near "waters of the United States", drains into "waters of the United States", and/or is in a floodway or bypass. If a levee were to fail, runoff from a site where sewage effluent had been placed could be transported into Primary Zone waterways. In addition, there is no currently available information for these various criteria, and creation of such a data base would be expensive and time-consuming. Continuous monitoring would also be needed.

V. CEQA ANALYSIS

The proposed regulation and Plan amendment is essentially an environmental protection measure which is proposed as part of the Commission's integrated overall planning effort in order to assure long term protection of the natural resources and ecosystem values of the Delta. The Commission's planning effort and this staff report indicate the beneficial nature of the proposal. This section presents additional information concerning the staff's analysis of possible environmental impacts, although a strong argument could be made that this proposed action is exempt from CEQA as an environmental protection measure (see 14 C.C.R. Section 15307).

The proposed regulation and amendment to the Plan would preclude construction of new sewage treatment facilities, including holding ponds, and areas for disposal of sewage effluent and sewage sludge in the Primary Zone of the Delta. The purpose of proposed P-3 is to protect the renewable natural resources of the Delta Primary Zone. The proposed regulation would protect existing agricultural, wildlife habitat, and open space land uses, and protect viability of soils, surface water quality, and groundwater quality. The proposed regulation would protect against the potential adverse impacts which may occur from the application or disposal of sewage sludge and sewage effluent by prohibiting those activities in the Delta Primary

Zone. The proposed regulation would protect against the adverse impacts of the construction of new sewage treatment plants and storage ponds on large tracts of agricultural or wildlife habitat areas by prohibiting the construction of new facilities in the Delta Primary Zone. In addition, the prohibition of new facilities in the Primary Zone will protect against possible catastrophic events that could result in the release of untreated or partially treated sewage into the Primary Zone environment.

In the Commission's original consideration of the Plan, the Commission analyzed the possible environmental impacts of the Plan adoption, including P-3, and concluded there would be no significant adverse effects from the Plan as a whole. Analysis of the possible environmental impacts of the adoption of the proposed regulation also indicate that no significant adverse environmental impacts would result.

There are two exceptions in the proposed amendment, included by the Commission as "grandfathered" projects that had already been analyzed under CEQA in certified Final Environmental Impact Reports (FEIR) adopted with mitigation and findings by the appropriate agencies. These grandfathered projects are: a proposed new sewage treatment plant in the Primary Zone within the City of Rio Vista, west of the Sacramento River and northeast of Highway 12, and a proposed new area of disposal for sewage effluent and sewage sludge on approximately 2,600 acres of the 2,900 acres of land on Jersey Island now owned by the district in Contra Costa County, which is located south of the San Joaquin River and west of Bethel Island. All of Jersey Island is located in the Primary Zone.

The impacts of the proposed sewage treatment plant in the City of Rio Vista will consist of the conversion of approximately 150 acres of unirrigated, non-prime, rangeland currently used for cattle grazing to hard surfaced parking and storage areas, buildings, treatment facilities, and ponds. The City has not yet selected, nor applied for or received permits for a specific location for disposal of the treated wastewater. The treated wastewater will either be used to irrigate golf courses or released into the waters of the Sacramento River; treatment would have to be adequate to meet relevant standards. The sludge will be disposed at a solids waste disposal facility outside the Delta Primary Zone (Rio Vista Northwest Area Wastewater Treatment Plan Final EIR, March 1992). Project adverse impacts to habitat on site would be limited by mitigation requirements to protect a small area of Goddings willow trees and an area of disturbed northern clay pan vernal pools. Due to site characteristics--elevation above 10 feet, mineral soils, non-prime soil, etc.--impacts on the Primary Zone will be minimized.

The proposed use of the 2,900 acre Jersey Island site for disposal of sewage effluent and sewage sludge would entail changing the agricultural use of the site from grazing land to irrigated row crops, such as barley or corn to be used as animal feed, or alfalfa. The environmental review determined there is adequate acreage on Jersey Island to accommodate all the sewage effluent and all the sewage sludge to be generated by the full build-out of the treatment facility. The estimated maximum volume of sewage effluent disposal at full build-out would be eight million gallons per day (mgd), and up to 2,289 tons per year of sewage sludge. The existing treatment facility, located outside the Primary Zone, would be increased in capacity from 2.9 mgd to 8.0 mgd. The treated effluent would require 2,600 acres for land disposal; an alternative for disposal of treated effluent would be release into the San Joaquin River. The FEIR analyzed both alternatives. A final determination of sewage effluent disposal has not yet been determined by the Ironhouse Sanitary District; no Regional Water Quality Control Board permits have been issued. The sewage sludge would require 2,600 acres of the 2,900 acres owned by the District on Jersey Island (Ironhouse Sanitary District Wastewater Facilities Plan and Delta Environment Science Center Final EIR, October, 1994).

These approved projects are both located in the extreme western areas of the Delta and thus would not impact water quality levels near the three major drinking water sources located in the central Delta Primary Zone (Contra Costa Water District, State Water Project and Central Valley Project). The locations are adjacent to the western ends of the two major rivers in the Primary Zone, the Sacramento River and the San Joaquin River.

The purpose of the adoption of the proposed regulation is to prevent significant adverse environmental impacts to the resources of the Delta, including soils, water quality, and wildlife habitats. The impact of the amendment would be to maintain the existing land management practices which are currently approved, monitored and studied by a variety of entities with authority over some portion of the Delta Primary Zone lands and waters. These entities include County Health Departments, the State Department of Health Services, the San Francisco and Central Valley Regional Water Quality Control Boards, the State Water Resources Control Board, the Department of Fish and Game, the Department of Water Resources, and others.

It is the practice of many agricultural land managers in the Delta to apply chemical fertilizers in the needed ratios of nitrogen, potassium, and phosphorus, and sometimes zinc and

sulphur, to Delta lands. The amount and type of additives is carefully determined by considering soils characteristics, crop needs, availability of materials, costs, and other factors. Organic fertilizers and enhancements, such as chicken manure are not used on peat soils, but are occasionally used on lands on the edges of the Delta with mineral soils. This proposal would not result in changes to existing chemical fertilizer use, thus there would be no significant adverse effect as defined by CEQA.

Review and analysis of the possible significant adverse environmental impacts from adopting the proposed regulation and Plan amendment to maintain the current land management practices indicate there will be no significant adverse environmental impacts from the proposed action. There are no new treatment plants currently proposed in the Primary Zone, with the exception of the Rio Vista plant which is addressed in the proposed regulation. There are existing ponds associated with the Stockton Treatment Plant, ponds located on Lower Roberts Island in the Primary Zone, and an agricultural site on Lower Roberts Island in the Primary Zone which has existing approvals from the CVRWQCB for irrigation of agricultural lands with treated effluent (Jacques); these existing, authorized, and permitted ponds and irrigation activities would not be affected by the proposed regulation. The proposed regulation would preclude new holding ponds and new areas for disposal of sewage effluent in the Primary Zone.

Since the environmental analysis of the proposed action indicates that no significant adverse effects would result, the analysis is similar in effect to the analysis provided in a negative declaration prepared for CEQA conformance (see P.R.C. Section 21064; CEQA Guidelines, 14 C.C.R. Sections 15071, 15371). Since the proposal would not result in significant adverse effects, an analysis of alternatives is not required by CEQA or by the Commission's regulations. However, the Commission has reviewed the potential environmental impacts of the alternatives it has considered for compliance with the Administrative Procedures Act.

The Commission has reviewed three alternative proposals: (1) not adopting the proposed regulation and Plan amendment, which would leave regulation of the use of sewage effluent and sewage sludge to other agencies, primarily the U.S. Environmental Protection Agency, the California Regional Water Quality Control Boards, and local governments; and location of new sewage treatment facilities, including storage ponds to special districts, local governments and the Regional Water Quality

Control Boards; (2) adopting a revised regulation and Plan amendment which allows placement of sewage effluent and sewage sludge in some parts of the Delta Primary Zone which are high enough in surface elevation to not be subject to flooding if a levee breaks, or parts of the Delta Primary Zone which have sufficient depth to natural groundwater level to preclude possible contamination (groundwater elevations in the Primary Zone are artificially controlled by pumping); or (3) amending the regulation to delete the language which prohibits new sewage treatment plants in the Primary Zone. None of the alternatives would meet the Commission's mandate to protect Delta Primary Zone resources and existing land uses as effectively. Each would provide less protection of the environment and have greater potential for environmental harm.

Not adopting the proposed regulation and Plan amendment would potentially allow such environmental harmful activity to proceed in portions of the Primary Zone; San Joaquin County has already adopted a General Plan policy which precludes placement of sewage sludge and sewage effluent in the Delta Primary Zone in the San Joaquin County. Yolo and Solano Counties are currently developing ordinances to address regulation of disposal of sewage sludge. Contra Costa County and Sacramento County currently require land use permits, although Contra Costa County planning staff indicated no application for disposal in the Primary Zone has been submitted. Solano and Sacramento Counties, however, indicate industry interest in disposal of sewage effluent and sewage sludge on agricultural lands in the Delta Primary Zone.

Because there are no discernible adverse environmental impacts associated with adoption of the regulation and the Plan amendment, no mitigation measures are proposed or included.

Short-term environmental impacts will be negligible or non-existent, as adoption of the proposed regulation and Plan amendment will result in no change to current land management practices and no change to the environment.

Long-term impacts again will be negligible or non-existent, as the proposed regulation and Plan amendment serve to protect the natural resources of the Delta and will result in no change to current land management practices and no adverse change to the environment.

There will be no growth-inducing impacts; the proposed regulation and Plan amendment would limit construction of new sewage treatment facilities and holding ponds in the Primary Zone. However, the existing community facilities could be retained, maintained, and upgraded as needed to meet community

demands; to protect public health, safety, and welfare; and thus protect natural resources such as surface water and groundwater quality in and around the existing unincorporated communities.

Analysis of possible cumulative impacts indicates there would be none. Current land management practices would be continued.

There would be no change to potential adverse environmental impacts which may be associated with continued use of other areas outside the Primary Zone for disposal of sewage effluent or sewage sludge. This proposal would not change the use of other sites. Potential impacts from future projects outside the Delta Primary Zone would be too uncertain and speculative to analyze here. Prohibiting disposal of sewage effluent and sewage sludge in the Primary Zone would result in the materials continuing to be disposed on other, less environmentally-sensitive agricultural lands, forests, reclamation sites, or with appropriate treatment, disposal on public contact sites such as public parks, plant nurseries, roadsides, golf courses, lawns and gardens, or in landfills outside the Delta Primary Zone, and subject to regulation by other federal, State and local agencies. Existing disposal practices would not change, thus there would be no significant effect on the environment.

Some sewage sludge may be currently being disposed of in existing solid waste disposal sites outside the Delta Primary Zone. Pursuant to statutory requirements to plan to reduce the total amount of waste from all sources which is disposed at landfills, public agencies which are responsible for planning and providing for municipal waste disposal are pursuing programs to reuse, recycle, and divert material away from solid waste disposal sites. Programs include recycling of paper, cardboard, glass, metals, waste oil, and yard waste. Many sludge generating entities are or may be seeking alternative disposal sites. Ample sites in other areas of the State would appear to be available for disposal.

The possibilities of potential traffic impacts related to possible future disposal sites and transport associated with those disposal sites **outside** the Delta Primary Zone are too uncertain and too speculative to evaluate. If P-3 is adopted and implemented, then sewage sludge and sewage effluent will continue to be disposed outside the Delta Primary Zone as it is now. Thus, current traffic patterns would continue to the extent such material is currently being hauled to a disposal area or landfill different from the treatment location.

ATTACHMENTS:

Attached is a list of relevant reference materials which staff reviewed in the preparation of this staff report and which are included in the rulemaking file for the proposed regulation; a list of the special status species known or potentially known to occur in the Sacramento-San Joaquin Delta; a copy of a map of the Delta Primary Zone; a draft resolution; and summaries and responses to environmental comments.

Also included in the rulemaking file are portions of the administrative record for the adoption of the Land Use and Resource Management Plan for the Primary Zone of the Delta as pertain to the proposed regulation.

References:

Delta Protection Commission, Land Use and Resource Management Plan for the Primary Zone of the Delta, 2/95

Department of Water Resources, Delta Atlas, 1993

Central Valley Regional Water Quality Control Board Staff Report on General Waste Discharge Requirements for Biosolids and Septage and Waiving Waste Discharge Requirements for Exceptional Quality Biosolids, 5/26/95

Environmental Protection Agency, A Plain English Guide to the EPA Part 503 Biosolids Rule, 9/94

Environmental Protection Agency, Section 503, et seq, Standards for the Use or Disposal of Sewage Sludge

Straub et al, "Hazards from Pathogenic Microorganisms in Land Disposed Sewage Sludge", 1993

State of Washington, Department of Ecology, Draft Biosolids Management Guidelines for Washington State, 10/93

Lesser, et al, "Round Table Report of the Subcommittee on General Risk Assessment", 1/95

Merced County Department of Public Health, Comments on Draft of Proposed Merced County Sludge Ordinance, 4/30/94

Tackett, "Sewage Sludge is a Dangerous Fertilizer", Testimony before Pennsylvania DER, 6/24/93

Babish, "Health Risks Associated with the Organic Fraction of Municipal Sewage Sludges" 8/1/93

Hunt, "Pathogens in Sewage Sludges and Sludge-Amended Soils", 7/1/93

Regional Monitoring News, "Central San's Experience with Diazinon and Chlorpyrifos", Winter 1995-96

Special Status Species Known or Potentially Known to Occur in the Sacramento-San Joaquin Delta.

	COMMON AND SCIENTIFIC NAME	STATUS	OCCURRENCE IN DELTA
PLANTS	*Suisun marsh aster *Aster lentus*	Fed-C2; CNPS-1B	Common
	Slough thistle *Cirsium crassicaule*	Fed-C2; CNPS-1B	Unknown
	Delta coyote thistle *Eryngium racemosum*	Ca-E; Fed-C2; CNPS-1B	Historic
	Contra Costa wallflower *Erysimum capitatum* var. *angustatum*	Ca-E; Fed-E; CNPS-1B	Antioch Dunes
	*California hibiscus *Hibiscus lasiocarpus*	CNPS-2	Common
	*Delta tule pea *Lathyrus jepsonii* var. *jepsonii*	Fed-C2; CNPS-1B	Common
	*Mason's lilaeopsis *Lilaeopsis masonii*	Ca-R; Fed-C2; CNPS-1B	Common
	Colusa grass *Neostapfia colusana*	Ca-E; Fed-P(T); CNPS-1B	Jepson Prairie Preserve
	*Antioch Dunes evening primrose *Oenothera deltoides* ssp. *howellii*	Ca-E; Fed-E; CNPS-1B	Antioch Dunes, Brannan Island
	*Sanford's arrowhead *Sagittaria sanfordii*	Fed-C2; CNPS-1B	Uncommon
	*Marsh skullcap *Scutellaria galericulata*	CNPS-2	Uncommon
	Blue skullcap *Scutellaria lateriflora*	CNPS-2	Probably extirpated
	Caper-fruited tropidocarpum *Tropidocarpum capparideum*	Fed-C2; CNPS-1A	Possibly extinct
	Solano grass *Tuctoria mucronata*	Ca-E; Fed-E; CNPS-1B	Jepson Prairie Preserve
BIRDS	Common loon (breeding) *Gavia immer*	Ca-CSC	Uncommon (winter)
	American white pelican (nesting colony) *Pelecanus erythrorhynchos*	Ca-CSC	Common (winter)
	Double-crested cormorant (rookery) *Phalacrocorax auritus*	Ca-CSC	Common
	Western least bittern *Ixobrychus exilis hesperis*	Ca-CSC; Fed-C2	Rare
	White-faced ibis (rookery) *Plegadis chihi*	Ca-CSC; Fed-C2	Occasional (non-breeding)
	*Aleutian Canada goose *Branta canadensis leucopareia*	Ca-CSC; Fed-T	Occasional (winter)
	Bald eagle *Haliaeetus leucocephalus*	Ca-E; Fed-E	Rare (winter)
	Northern harrier (nesting) *Circus cyaneus*	Ca-CSC	Common
	Sharp-shinned hawk (nesting) *Accipiter striatus*	Ca-CSC	Uncommon
	Cooper's hawk (nesting) *Accipiter cooperii*	Ca-CSC	Uncommon
	*Swainson's hawk (nesting) *Buteo swainsoni*	Ca-T; Fed-C3c	Common (summer)
	Ferruginous hawk (wintering) *Buteo regalis*	Ca-CSC; Fed-C2	Uncommon (winter)
	Golden eagle *Aquila chrysaetos*	Ca-CSC	Uncommon (winter)

Continued

	COMMON AND SCIENTIFIC NAME	STATUS	OCCURRENCE IN DELTA
	Merlin *Falco columbarius*	Ca-CSC	Uncommon (winter)
	Peregrine falcon (nesting) *Falco peregrinus anatum*	Ca-E; Fed-E	Uncommon (winter)
	Prairie falcon (nesting) *Falco mexicanus*	Ca-CSC	Uncommon (winter)
	*California black rail *Laterallus jamaicensis coturniculus*	Ca-T; Fed-C2	Occasional
	*Greater sandhill crane *Grus canadensis tabida*	Ca-T	Common (winter)
	Long-billed curlew (breeding) *Numenius americanus*	Ca-CSC	Occasional (winter)
	California gull (nesting colony) *Larus californicus*	Ca-CSC	Common (non-breeding)
	Black tern (nesting colony) *Chlidonias niger*	Ca-CSC; Fed-C2	Uncommon (non-(breeding)
	Burrowing owl (burrow sites) *Athene cunicularia*	Ca-CSC	Uncommon
	Long-eared owl (nesting) *Asio otus*	Ca-CSC	Uncommon
	Short-eared owl (nesting) *Asio flammeus*	Ca-CSC	Uncommon
	Mountain plover (wintering) *Charadrius montanus*	Ca-CSC; Fed-C2	Rare (winter)
	Yellow warbler *Dendroica petechia*	Ca-CSC	Uncommon (summer)
	Suisun song sparrow *Melospiza melodia maxillaris*	Ca-CSC; Fed-C2	Suisun Marsh
	*Tricolored blackbird *Agelaius tricolor*	Ca-CSC; Fed-C2	Occasional
MAMMALS	Suisun shrew *Sorex ornatus sinuosus*	Ca-CSC; Fed-C1	Suisun Marsh
	Townsend's western big-eared bat *Plecotus townsendii*	Ca-CSC	Uncommon
	Pallid bat *Antrozous pallidus*	Ca-CSC	Uncommon
	Western mastiff bat *Eumops perotis*	Ca-CSC	Uncommon
	*Salt-marsh harvest mouse *Reithrodontomys raviventris*	Ca-E; Fed-E	Uncommon (western Delta)
	*San Joaquin kit fox *Vulpes macrotis mutica*	Ca-T; Fed-E	Rare (southern Delta)
	Badger *Taxidea taxus*	Ca-CSC	Uncommon
REPTILES/ AMPHIBIANS	California tiger salamander *Ambystoma californiense*	Ca-CSC; Fed-C2	Pools, Jepson Prairie Preserve
	California red-legged frog *Rana aurora draytonii*	Ca-CSC; Fed-C1	Probably extirpated
	Foothill yellow-legged frog *Rana boylei*	Ca-CSC; Fed-C2	Unlikely
	*Western pond turtle *Clemmys marmorata*	Ca-CSC; Fed-C2	Common
	*Giant garter snake *Thamnophis gigas*	Ca-T; Fed-T	Uncommon

Continued

	COMMON AND SCIENTIFIC NAME	STATUS	OCCURRENCE IN DELTA
INVERTEBRATES	Conservancy fairy shrimp *Branchinecta conservatio*	Fed-E	Vernal pools (Jepson Prairie Preserve)
	Vernal pool fairy shrimp *Branchinecta lynchi*	Fed-T	Vernal pools
	Vernal pool tadpole shrimp *Lepidurus packardi*	Fed-E	Vernal pools (Jepson Prairie Preserve)
	*Antioch Dunes anthicid beetle *Anthicus antiochensis*	Fed-C2	Uncommon (Sand dunes)
	*Sacramento anthicid beetle *Anthicus sacramento*	Fed-C2	Uncommon (Sand dunes)
	*Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	Fed-T	Occasional
	San Joaquin Dune beetle *Coelus gracilis*	Fed-C1	Antioch (possibly extirpated)
	Delta green ground beetle *Elaphrus viridis*	Fed-T	Jepson Prairie Preserve
	Lange's metalmark butterfly *Apodemia mormo langei*	Fed-E	Antioch Dunes
FISH	River lamprey *Lampetra ayresi*	Ca-CSC	Uncommon
	Pink salmon *Oncorhynchus gorbuscha*	Ca-CSC	Uncommon
	Chinook salmon (spring-run) *Oncorhynchus tshawytscha*	Ca-CSC	Occasional
	*Chinook salmon (winter-run) *Oncorhynchus tshawytscha*	Ca-E; Fed-E	Occasional
	*Delta smelt *Hypomesus transpacificus*	Ca-T; Fed-T	Uncommon
	*Sacramento splittail *Pogonichthys macrolepidotus*	Ca-CSC; Fed-P(T)	Occasional
	Hardhead *Mylopharadon conocephalus*	Ca-CSC	Uncommon
	Sacramento perch *Archoplites interruptus*	Ca-CSC; Fed-C2	Possibly extirpated

CODES:

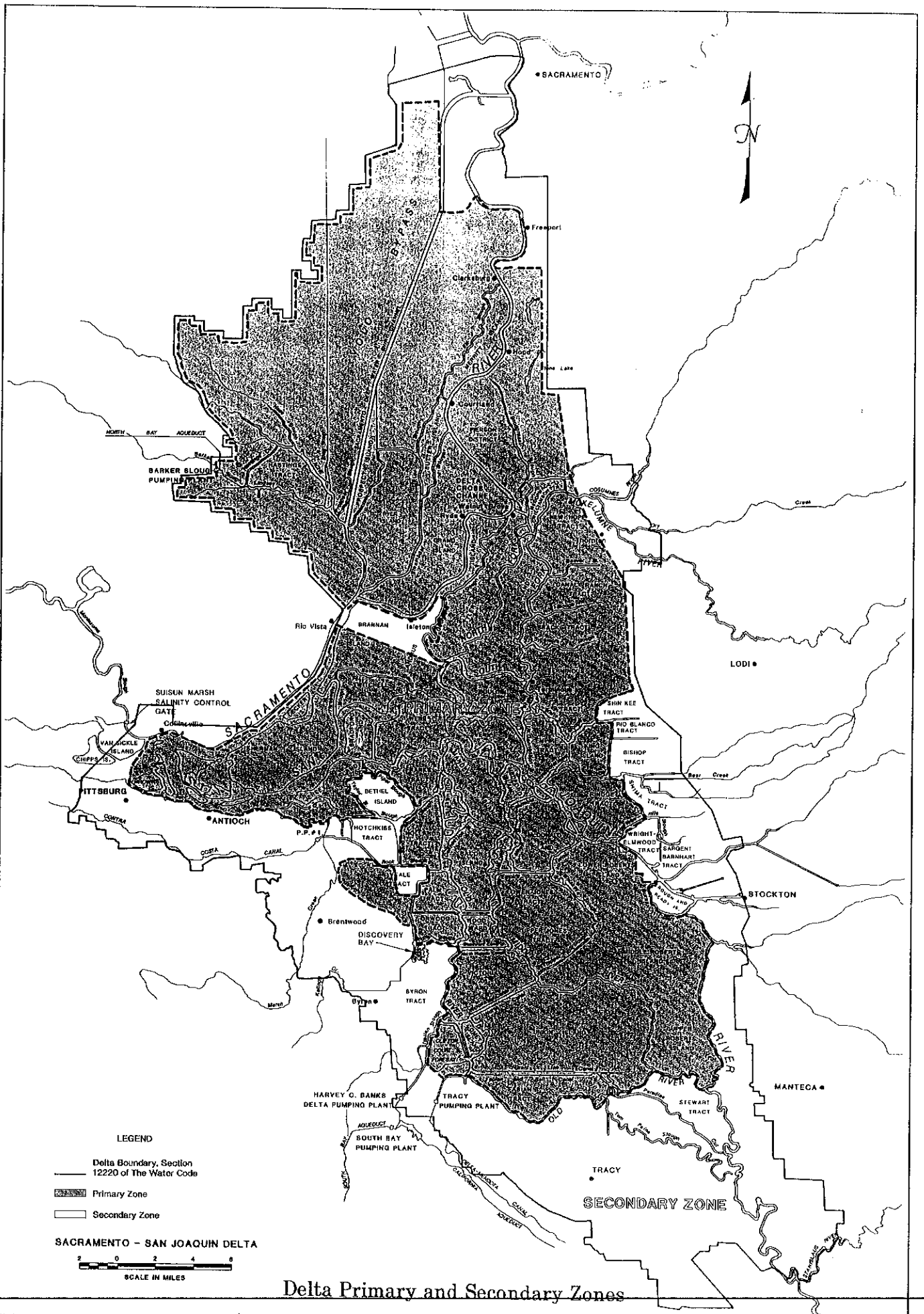
Ca-E (Listed as Endangered by the State of California)
Ca-T (Listed as Threatened by the State of California)
Ca-R (Listed as Rare by the State of California)
Ca-CSC (California Department of Fish and Game "Species of Special Concern")

Fed-E (Listed as Endangered by the Federal Government)
Fed-T (Listed as Threatened by the U.S. Fish and Wildlife Service)
Fed-P(T) (Proposed as Threatened by the U.S. Fish and Wildlife Service)

Fed-C1 (Category 1 Candidate for listing by the U. S. Fish and Wildlife Service)
Fed-C2 (Category 2 Candidate for listing by the U.S. Fish and Wildlife Service)
Fed-C3c (Category 3c Candidate for listing by the U.S. Fish and Wildlife Service)

CNPS-1A (California Native Plant Society List 1A Plant)
CNPS-1B (California Native Plant Society List 1B Plant)
CNPS-2 (California Native Plant Society List 2 Plant)

Species marked with a (*) are most likely to be found near SB 34 work areas and are discussed in greater detail in Appendix E.



Delta Primary and Secondary Zones

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DRAFT

RESOLUTION NO. 96-

WHEREAS, Public Resources Code Section 29735 creates the Delta Protection Commission consisting of 19 members including: one member of each of the five counties within the Delta whose supervisorial district is within the primary zone; three elected city council members from regional and area councils of government; one member from the board of directors of five different reclamation districts which are located in the primary zone who are residents of the Delta; the Director of the Department of Parks and Recreation or the director's designee; the Director of the Department of Food and Agriculture or the director's designee; the Director of the Department of Fish and Game or the director's designee; the Executive Officer of the State Lands Commission or the executive officer's designee; the Director of the Department of Boating and Waterways or the director's designee; and the Director of the Department of Water Resources or the director's designee; and

WHEREAS, Public Resources Code Section 29760 states "the Commission shall prepare and adopt, by a majority vote of the membership of the Commission, and thereafter review and maintain, a comprehensive long-term resource management plan for land uses within the primary zone of the delta"; and

WHEREAS, Public Resources Code Section 29760 states "the regional plan shall consist of the map of the primary zone and text setting forth a description of the needs and goals for the delta and a statement of the policies, standards, and elements of the regional plan"; and

WHEREAS, Public Resources Code Section 29760 states "the regional plan shall meet the following requirements:

Protect and preserve the cultural values and economic vitality that reflect the history, natural heritage, and human resources of the delta;

Conserve and protect the quality of renewable resources;

Preserve and protect agricultural viability;

Restore, improve, and manage levee systems by promoting strategies, including, but not limited to, methods and procedures which advance the adoption and implementation of coordinated and uniform standards among governmental agencies for the maintenance, repair, and construction of

both public and private levees;

Preserve and protect delta dependent fisheries and their habitat;

Preserve and protect riparian and wetlands habitat, and promote and encourage a net increase in both the acreage and value of those resources on public lands and through voluntary cooperative arrangements with private land owners;

Preserve and protect the water quality of the delta, both for instream purposes and for human use and consumption;

Preserve and protect open-space and outdoor recreational opportunities;

Preserve and protect private property interests from trespassing and vandalism;

Preserve and protect opportunities for controlled public access and use of public lands and waterways consistent with the protection of natural resources and private property interests;

Preserve, protect, and maintain navigation;

Protect the delta from any development that results in any significant loss of habitat or agricultural land;

Promote strategies for the finding, acquisition, and maintenance of voluntary cooperative arrangements, such as conservation easements, between property owners and conservation groups that protect wildlife habitat and agricultural land, while not impairing the integrity of levees;

Permit water reservoir and habitat development that is compatible with other uses"; and

WHEREAS, on February 23, 1995, the Delta Protection Commission unanimously adopted the regional plan, including Utilities and Infrastructure Policy P-3 which stated "New sewage treatment facilities (including storage ponds) and areas for disposal of sewage effluent and sewage sludge shall not be located within the Delta Primary Zone. [Note: The Rio Vista project as described in the Final Environmental Impact Report for such project, and the Ironhouse Sanitary District use of Jersey Island for disposal of treated wastewater and biosolids are exempt from this policy.]"; and

WHEREAS, the Commission was sued by Wheelabrator Clean Water Systems, Inc., Bio Gro Systems Division in Sacramento County Superior Court; and

WHEREAS, the Superior Court ruled that Utilities and Infrastructure Policy P-3 was invalid "for a substantial failure to comply with the APA;" and

WHEREAS, the Commission agreed to abide by the court's ruling and set aside that policy; and

WHEREAS, the Commission proposed to adopt the policy as a regulation in conformance with Administrative Procedure Act (APA) and to amend the regional plan to include the regulation, and accordingly issued notice of the proposed action pursuant to the requirements of the APA; and

WHEREAS, notice of the Commission's proposed adoption of the regulation was published on Friday, February 23, 1996, in the Sacramento Bee and the Stockton Record; and

WHEREAS, the notice provided a public comment period from February 23, 1996, through and ending on April 8, 1996; and

WHEREAS, as announced in the Notice of Proposed Adoption, the Commission held three public hearings on the proposed regulation and plan amendment in March and April of 1996 in the north, south, and west delta: specifically, in Walnut Grove, Sacramento County; west of Stockton, San Joaquin County; and Antioch, Contra Costa County; and

WHEREAS, in accordance with Public Resources Code section 29761, the Commission provided to the Director of the Governor's Office of Planning and Research (OPR) a copy of the Notice of Proposed Adoption and the Staff Report discussing the proposal and alternatives associated with the proposed regulation and plan amendment, and the Commission has received no comments or recommendations from OPR regarding the proposed action; and

WHEREAS, the Commission has reviewed and considered the environmental information contained in the "Staff Report and Environmental Analysis for Proposed Amendment to the Land Use and Resource Management Plan for the Primary Zone of the Delta and Adoption of Regulation Governing Siting of New Sewage Treatment Facilities and Areas for Disposal of Sewage Effluent and Sewage Sludge in the Primary Zone of the Delta," dated February 23, 1996, prepared by the Commission; and

WHEREAS, the Commission has reviewed and considered the

notice of the Commission's proposed adoption of the regulation, and all comments received during the comment period, and the revised staff report; and

WHEREAS, the Commission had fully complied with the requirements of 14 C.C.R. sections 20015-20019 regarding its obligations regarding its resource management plan under the California Environmental Quality Act as a certified regulatory program; and

WHEREAS, the adoption of the proposed regulation and plan amendment would be consistent with the findings and declaration of policy contained in the Delta Protection Act because the amended plan would "protect, maintain, and, where possible, enhance and restore the overall quality of the delta environment, including, but not limited to, agriculture, wildlife habitat, and recreational activities"; and will "assure orderly, balanced conservation and development of delta land resources";

NOW, THEREFORE BE IT RESOLVED THAT:

(1) the Delta Protection Commission hereby makes a determination of no significant effect (See 14 C.C.R. section 20019);

(2) the Delta Protection Commission hereby adopts a regulation and amendment to the comprehensive long-term resource management plan for land uses within the primary zone of the Delta entitled "Land Use and Resource Management Plan for the Primary Zone of the Delta" which states:

> Utilities and Infrastructure Policy P-3: New sewage treatment facilities (including storage ponds) and areas for disposal of sewage effluent and sewage sludge shall not be located within the Delta Primary Zone.
> [Note: The Rio Vista project, as described in the Final Environmental Impact Report for such project, and the Ironhouse Sanitary District use of Jersey Island for disposal of treated wastewater and biosolids are exempt from this policy.]

(3) the Delta Protection Commission hereby directs staff to prepare notice per 14 C.C.R. section 20020; prepare and submit the rulemaking file in this matter to the Office of Administrative Law; and take all other actions needed to implement the Commission's action adopting Utilities and Infrastructure Policy P-3.

Approved by the Commission on September 26, 1996, by a roll call vote of ____ ayes,____ noes,____ abstentions.

September 13, 1996
Attachment

SUMMARIES OF AND RESPONSES TO ENVIRONMENTAL COMMENTS

Background

The Commission's planning program has been certified by the Secretary for Resources pursuant to Public Resources Code section 21080.5, authorizing the Commission to use its own documents for purposes of CEQA compliance, in lieu of preparing environmental impact reports or negative declarations on the adoption of, amendment of, or other action on, the Land Use and Resource Management Plan ("Plan"). The Commission must prepare, adopt, and periodically update the Plan in accordance with the provisions of the Delta Protection Act. (Public Resources Code §29700 et seq.)

The Commission's regulations governing compliance with the California Environmental Quality Act ("CEQA"), which are part of its certified program, require, among other things, that the Commission staff must prepare and present to the Commission a written summary and response to all environmental points raised during the review of a proposal to amend the Plan, and must do so before the Commission acts on the proposal. The Commission's regulations provide in part:

> "The written summary and response to environmental points shall be presented for consideration and approval by the Commission before, or no later than at the same time as, the plan or proposed amendment is considered for adoption by the Commission."
>
> (Title 2 California Code of Regulations §20018.)

Presented below are summaries of and responses to environmental points raised during the review of the proposed regulation and plan amendment, which would have the effect of precluding new wastewater treatment plants and disposal areas for sewage sludge and sewage effluent in the Delta Primary Zone. Included are comments on environmental issues raised in regard to the Commission's proposed action, as well as comments on the environmental procedures used in the Commission's proceeding. The source of the comment is indicated at the end of each comment summary. For general comments which support or oppose the proposal but could be considered general environmental comments, a general response is provided.[1]

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[1] If the Commission adopts the proposed action, the Commission's staff will then prepare a summary of and response to each comment received on the proposal, as part of the Final Statement of Reasons to be submitted to the Office of Administrative Law with the adopted proposal.

GENERAL COMMENTS AND RESPONSES

A. Comment: A number of commenters offered support for the Commission's proposed action and provided general reasons for their positions which could be considered environmental points, indicating that installing new wastewater treatment facilities in the Delta Primary Zone could threaten spills, pollution of groundwater, pollution of adjacent lands, and displacement of agricultural activities; and that placing new disposal areas for sewage sludge and effluent in the Primary Zone would threaten and could result in build-up of metals and salinity in the soil, migration of pathogens through the soil, public health effects due to exposure to pathogens, trihalomethane, and other chemical compounds, added nitrates in groundwater, adverse public perception damaging to markets for produce, and refusal of processors to purchase produce grown in areas exposed to contamination from sewage sludge. (D. Nomellini, E. Muller, J. Burick, B. Burick, B. Ferguson, P. Ohm, J. Braas, F. Andresen, V. Andresen, C. Andresen, A. and A. Strecker, D. Erskine, N. Mufis, D. Bauer, D. Guy, W. Bechthold, G. Gartrell, J. Beswick, J. Herrick, J. Boese, R. Orzalli, J. McCaa, D. Pisila, F. Etzel, A. Medvitz, J. Herrick, R. Woodard, R. Matthews.)

Response: The action being considered by the Commission was proposed in order to protect the natural resources and the unique ecosystem of the Delta Primary Zone from threatened degradation and deterioration.

B. Comment: A number of commenters opposed the Commission's proposed action and provided general reasons why they considered the use of sewage sludge in agriculture to be adequately regulated and beneficial to the environment and the economy, and asserted that implementation of the proposal would result in adverse environmental impacts by resulting in increased use of landfills for biosolids disposal, and increased use of fertilizers and pesticides. (R. Horvath, R. Larson, L. Novick, C. Johns, D. Milnes, R. Beebe, J. Meral, R. Luthy.)

Response: The action being considered by the Commission was proposed in order to protect the natural resources and the unique ecosystem of the Delta Primary Zone from threatened degradation and deterioration. Although commenters have asserted generally that sewage sludge and sewage effluent disposal in agricultural areas, is beneficial, these assertions do not address the specific natural resources of the Delta Primary Zone and information contained in the Commission's record indicates that application of these materials may result in addition and build-up of metals, salinity, nitrates, other chemical compounds, and pathogens in soil and groundwater, since such materials are not typically removed by wastewater treatment facilities. See also responses to specific comments presented below.

SPECIFIC COMMENTS AND RESPONSES

E1. Comment: The Commission failed to follow the required CEQA procedures of preparing an initial study and then an environmental impact report or negative declaration, in proposing its action prohibiting new wastewater treatment plants and areas for disposal of sewage sludge and effluent in the Delta Primary Zone. The Commission must be certified by the Secretary for Resources in order to claim it is operating under a certified program. (Planning and Conservation League, April 1, 1996.)

Response: The commenter apparently did not realize that the Commission's planning program was certified by the Secretary for Resources in 1994, and the Commission is authorized to use its documents for CEQA compliance instead of preparing EIRs and negative declarations. The certification is reflected in the Resources Agency's CEQA Guidelines at section 15251(n). (Title 14 California Code of Regulations § 15251(n).) The proposed action is within the Commission's certified program.

E2. Comment: Biosolids are a valuable commodity the use of which is safe and can improve the environment and the economy of the Delta Primary Zone, and existing state and federal regulations on the use of recycled wastewater and biosolids already protect public health and the environment. (City of Stockton, March 29, 1996.)

Response: The comment does not directly address the Commission's proposed action and seems to assume that any and all possible use of sewage sludge and effluent in the Delta Primary Zone would be beneficial to the Delta environment. The comment implies that existing state and federal regulations governing use of sewage sludge and effluent are sufficient to protect the environment in the Delta. The Commission recognizes that the U.S. Environmental Protection Agency has adopted regulations governing sewage sludge applications in 40 CFR Part 503. However, no studies which are based on conditions similar to those in the Delta have been provided which demonstrate support for such broad claims of environmental benefit and protection.

The administrative record for the proposed action, including commenters submittals, contains information describing potential adverse environmental effects that may occur from some sewage sludge applications. (For example, "Sewage Sludge is a Dangerous Fertilizer," Stanford L. Tackett, Ph.D., Prof.Emeritus, IUP Chemistry Dept., June 24, 1993. See Staff Report, Bibliography.) Various reports, which were reviewed in preparing the staff report, have described the limited nature of the studies which preceded the EPA regulations and have indicated that the long-term effects of applying sludge remain to be studied. (See for example, "Hazards from Pathogenic Micro-organisms in Land-Disposed Sewage Sludge," Timothy M. Straub, Ian L. Pepper, and Charles P. Gerba (1993).) Significant questions remain as to whether sludge applications may result in concentrations of and

interactions between heavy metals and other contaminants typically found in sewage sludge in receiving soils, in vegetation, and in wildlife dependent on such soils and vegetation. (Central Valley Regional Water Quality Control Board, General Order on Sewage Sludge, 1995, Responses to Comments.) Pathogens, metals, chemical residues, and salts, are typically not removed by wastewater treatment, and are, therefore, typically found in sewage sludge. As a result, these materials can accumulate or interact with receiving soils in a manner which may affect soil productivity, wildlife and the quality of groundwaters and nearby surface waters. Increased concentrations of salinity and metals due to sewage sludge applications were confirmed recently in agricultural plots testing applications of sludge from the City of San Diego. (Wheelabrator Clean Water Systems, Inc., Bio Gro Division, March 27, 1996, Exhibit B.)

E3. Comment: The Commission should use the appropriate terms, i.e., recycled water and biosolids rather than sewage sludge and sewage effluent, in order to avoid contributing to public confusion and to aversion, emotional fears and public perceptions which are adverse to sewage byproducts and can affect the ability to market these byproducts. (City of Stockton, March 29, 1996)

Response: The terms used in the Commission's proceeding accurately reflect the subject matter of the proposed regulation, and, therefore, do not themselves cause or contribute to public confusion, fears or emotions. The U.S. EPA regulations referenced by the commenter similarly use the term sewage sludge, referring to solid and liquid waste, and regulate the pollutants contained in sewage sludge, which may affect public health and the environment. (40 CFR Part 503, definitions in § 503.9; Welch v. Board of Supervisors of Rappahannock County (1995) 888 F.Supp. 753.) The commenter overstates the effect of wastewater treatment processes and existing regulations in asserting that existing regulations and treatment make sewage sludge and effluent completely safe and "free of biological and chemical constituents of concern." The EPA regulations provide minimum standards; they do not regulate all potentially harmful constituents typically found in sewage sludge; and they also expressly recognize the authority of state and local governments to adopt additional requirements to address local conditions. (40 CFR 503.5) EPA materials explaining its regulations governing sewage sludge and effluent are included in the Commission's administrative record for this matter. (U.S. EPA, "A Plain English Guide to Part 503 Biosolids Rule," EPA/832/R-93/003, September 1994.)

E4. Comment: The use of recycled water and biosolids is safe and is protective of human health and the environment. (City of Stockton, March 29, 1996.)

Response: This general comment is not directly related to the proposed regulatory action and the potential for adverse

environmental impacts to Delta Primary Zone resources which may result from the application of sewage sludge and effluent. The comment seems to imply that any and all use of these materials is beneficial for the environment and public health. See Response to Comment E2 above.

E5. Comment: The Commission's CEQA analysis is deficient because the adoption of regulations is not covered in the Commission's certified program under CEQA, and an EIR is required. The terms of certified programs are strictly construed and the Commission's own documents indicate that it is taking two actions, i.e., adopting a regulation and adopting a plan amendment. Thus, the commenter argues, since the regulation is not covered by the certification, and since the proposal would result in individual and cumulative effects and significant public controversy, an EIR must be prepared. (Wheelabrator Clean Water Systems, Inc., Bio Gro Division, March 27, 1996.)[2]

Response: The Commission disagrees. The Commission's certified program represents an integrated approach to environmental analysis of proposed projects. (Public Resources Code § 21080.5.) The proposed action is within the purview of the Commission's certified program, and the Commission's analysis reflects that it would not result in significant adverse environmental effects. (14 CCR §15251(n); 14 CCR §20015 et seq.)

The comment seems to reflect a lack of understanding of the Commission's certified program and the proposed action. The Commission proposes to amend its plan by adopting Utilities and Infrastructure Policy P-3 as a regulation. The adoption of the Plan amendment P-3 in the form of a regulation in accordance with the APA is consistent with the determination of the Sacramento Superior Court that the policy constituted a "regulation" under the APA. (Wheelabrator Clean Water Systems, Inc., Bio Gro Division v. Delta Protection Commission, Sacramento Superior Court No. 95-CS00946.) The Commission's certified program by its explicit terms includes its planning "program." (14 CCR §15251(n).) The proposed action is within and is part of that program. The term "program" extends to all of the Commission's actions affecting the plan. The Commission's certified program encompasses all types of plan amendments without regard to their form. (See Title 14 CCR §15251(n).) Commenter's argument seeks to elevate form over substance. To urge that the Commission consider separately, i.e., as separate actions for CEQA purposes, the adoption of the proposed regulation and the inclusion of the same language in the Plan as an amendment would constitute impermissible "piecemealing" under CEQA. (Citizens Assn. for Sensible Development v. County of Inyo (1985) 172 Cal.App.3d 151.) The Commission is taking one action, i.e., adopting a plan

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[2] Comments on behalf of Wheelabrator Clean Water Systems, Inc., Bio Gro Division were submitted by Craig Johns, Crosby, Heafey, Roach & May.

amendment in the form of a regulation.

The commenter asserts that individual and cumulative effects and public controversy will result from the proposal such that an EIR is required. However, the environmental analysis of the proposed action indicated no significant environmental impacts would result, and no evidence or supporting factual information has been presented to indicate that significant adverse environmental impacts will result from the proposed action, individually or cumulatively. The existence of public controversy alone does not constitute a significant environmental effect. (Public Resources Code § 21080(e), §21082.2.)

E6. Comment: The commenter contends that the Commission failed to analyze properly the potential short-term and long-term effects from the proposal when it concluded that current land management practices would continue without change. According to the commenter the proposal would result in closing down various "active land application sites within the Delta Primary Zone" which the commenter asserts would in turn result in increased use of harmful chemical fertilizers and pesticides. (Wheelabrator Clean Water Systems, Inc., Bio Gro Division, March 27, 1996.)

Response: The Commission disagrees with the commenter's assertions. The Commission's analysis properly concluded that no significant adverse short-term or long-term environmental effects would result from the proposal. Since the language of the proposal restricts only new disposal areas for sewage sludge and sewage effluent, as well as new wastewater treatment plants, the staff analysis correctly concludes that current land management practices would be allowed to continue. Thus, the proposal would not result in termination of existing operations, or an increase in chemical fertilizer or pesticide use. In order to be consistent with the Commission's plan subsequent amendments to local general plans will likely also preclude new disposal areas.

The comment provides no information to substantiate the opinion that the proposed action will result in an increase in the use of chemical fertilizers or pesticides. Unsubstantiated opinion does not constitute substantial evidence of a potentially significant effect. (Public Resources Code § 21082.2.) Sewage sludge and effluent are used as soil additives to enhance plant growth. There is no indication that the proposal would affect the use of pesticides, or other materials, to control pests, or would result in increased use of such materials compared to current use. Likewise, since the proposal would preclude siting new disposal areas in the Delta Primary Zone, existing practices would be expected to continue with regard to agricultural use of chemical fertilizers on lands not available for sewage sludge applications.

CEQA requires an environmental analysis to identify "significant effects," i.e. substantial, adverse changes in the physical conditions existing in the area affected by the proposed

project. (Public Resources Code § 21060.5 and § 21063.) The baseline for environmental analysis is existing physical conditions in the area affected by the proposed action, and the continuation of existing practices does not constitute a significant environmental effect resulting from the proposal. (Bloom v. McGurk (1994) 26 Cal.App.4th 1307.)

E7. Comment: The commenter contends that the Commission's analysis is inadequate in concluding that potential cumulative impacts would not result from the proposal, that current land management practices would be continued and that other potential impacts are too speculative to analyze. The commenter asserts that the Commission's analysis "fails to address many, identifiable cumulative impacts," and that the Commission must address such impacts both within the Delta Primary Zone and outside the Delta, citing Kings County Farm Bureau v. City of Hanford (1990) 221 Cal.App.3d 721-724, and City of Antioch v. City Council (1986) 187 Cal.App. 3d 1325, 1334. (Wheelabrator Clean Water Systems, Inc., Bio Gro Division, March 27, 1996.)

Response: The Commission's environmental analysis found no significant effects associated with the proposed action, including cumulative impacts. Since the Commission's analysis in this case is similar to the analysis which would be provided by a negative declaration, the holding of Kings County Farm Bureau v. City of Hanford, which applied to treatment of cumulative impacts in the preparation of an environmental impact report is inapplicable. Instead, under the Commission's certified program, what is required is a reasonable inquiry and an appropriate effort to investigate, and to disclose, potential adverse impacts related to the particular proposal. (Laupheimer v. State Department of Forestry (1988) 200 Cal.App.3d 440, 466.) In reaching its conclusion that the proposal would not result in significant cumulative impacts the Commission staff reviewed the proposal, the Commission's Plan, portions of the administrative record for the adoption of the Plan related to Utilities and Infrastructure Policy P-3, the local general plans of local jurisdictions within the Primary Zone, the materials listed in the bibliography attached to the Staff Report and all of the comments received.

The commenter alludes to "identifiable cumulative impacts" but does not identify any such impacts, and the Commission's analysis did not reveal any. Argument, speculation and unsubstantiated opinion do not constitute substantial evidence of a potentially significant impact. (Public Resources Code §21080(e), §21082.2.)

With regard to the potential for impacts to occur outside the Delta Primary Zone, the Commission acknowledges that, as a general principle, CEQA requires environmental conditions in the project area to be addressed, including such areas which may be beyond the lead agency's jurisdiction, and all of the significant impacts of a proposed project to be addressed. (Public Resources

Code § 21060.5 and § 21068.) However, where environmental impacts are too speculative to identify and to analyze, no further analysis is required. (See Public Resources Code § 21002.1(e) and §21100(c), (d), and (e).) The Commission staff recognized that future projects may be proposed which could not now be identified and whose impacts could not now be identified. The Commission is not required to speculate on possible future projects and their potential impacts. Such projects will receive analysis in the future consistent with CEQA requirements.

E8. Comment: The commenter contends that the Commission's environmental analysis is deficient because it fails to address potential significant effects, asserting that there will such effects on local agencies and referring generally to transportation impacts, risk of upset, shrinking landfill capacity, and increased chemical fertilizer use. (Wheelabrator Clean Water Systems, Inc., Bio Gro Division, March 27, 1996.)

Response: The commenter has provided no facts or evidence to support the general argument that the proposal will result in adverse effects on unidentified local agencies. The proposed action would apply to local entities in the Primary Zone of the Delta, but would not adversely affect their disposal activities. Commenter seems to assume, and argue based on the assumption, that the fact that Delta Primary Zone lands would not be available for sewage sludge disposal results in an adverse effect on sludge disposal agencies outside the Primary Zone. The Commission's proposal would not directly affect the activities of entities outside the Delta Primary Zone and the commenter has not identified any sludge disposal agencies which would be adversely affected by the Commission's proposal. Areas available for sludge disposal outside the Primary Zone would not be affected by this proposal. Sludge is currently being disposed on agricultural lands in several Central Valley counties. These activities are not affected by the proposed action. See also response to comment E6 above.

E9. Comment: The commenter contends that the Commission's environmental analysis is deficient and has not followed the Commission's own CEQA procedures in that it has not analyzed feasible mitigation measures. (Wheelabrator Clean Water Systems, Inc., Bio Gro Division, March 27, 1996.)

Response: The Commission's regulations require it to address feasible mitigation measures in order to lessen any identified potentially significant adverse effects, as defined by CEQA, when its analysis has identified such significant effects, pursuant to the review performed under the Commission's certified program. (14 CCR 20015-20021; 14 CCR 15251(n).) The Commission's analysis concluded that no significant adverse effects would result from the proposal. The obligation to address feasible alternatives and mitigation measures under CEQA generally, and under the Commission's certified program specifically, arises when potentially significant environmental

effects are identified which would result from a proposed action. (14 CCR §20016.) If no significant effects are identified, then no obligation arises under CEQA to address feasible alternatives and mitigation measures. Then the analysis functions like a negative declaration. See above response to comment E7.

E10. Comment: Commenter contends that the environmental analysis of alternatives to the Commission's proposed action was inadequate for CEQA purposes, since only two alternatives were considered. (Wheelabrator Clean Water Systems, Inc., Bio Gro Division, March 27, 1996.)

Response: The commenter mistakenly seeks to apply to the Commission's analysis the requirements for EIR preparation. Instead the Commission's analysis is conducted pursuant to the requirements of its certified program. (14 CCR §20015 et seq.) Since the environmental analysis of the proposed action did not identify any potentially significant adverse environmental impacts which would result from the proposal, an analysis of feasible alternatives was not required under the certified program for CEQA compliance. The Commission's analysis did, however, address the potential impacts of the alternatives it considered for purposes of satisfying APA requirements. See above responses to comments E7 and E9.

E11. Comment: Commenter asserts that the Commission should consider the alternative approach to regulating biosolids in the Delta Primary Zone offered by the commenter, which commenter argues would avoid potential adverse environmental impacts and also achieve the Commission's objectives. (Wheelabrator Clean Water Systems, Inc., Bio Gro Division, March 27, 1996.)

Response: The revised staff report addressing the proposed action discusses and responds to the commenter's suggested alternative regulatory approach. The suggested alternative attached to the March 27, 1996, letter and the revised alternative language submitted in April 1996, both rely in part upon U.S. EPA regulations (40 CFR Part 503) and prospective permits issued by the Central Valley Regional Water Quality Control Board or local entities to avoid potential adverse effects from disposal of sewage sludge and sewage effluent. However, the U.S, EPA regulations do not provide specific consideration for Delta resources, and the proposal assumes that requirements established by other agencies in the future would be adequately protective without knowing what such requirements will be and without the application of currently developed standards specifically designed to protect Delta resources. The suggested criteria referencing elevation, soil content, and depth to groundwater would be difficult and expensive to implement and exceedingly difficult to enforce. The staff analysis concluded that the suggested alternative would not achieve the Commission's objectives and would result in potential adverse environmental impacts to natural resources of the Delta Primary Zone.

E12. Comment: Commenter asserts that the proposed action will result in increased use of chemical fertilizers and animal manure in the Delta and these will in turn result in adverse environmental impacts. (Wheelabrator Clean Water Systems, Inc., Bio Gro Division, March 27, 1996.)

Response: The environmental analysis of the proposed action concluded that no significant adverse environmental effects would result from the proposal. No information was submitted to support the commenters argument that potential adverse effects would result from the proposed action due to increased use of chemical fertilizers and animal manure in the Primary Zone of the Delta. Unsupported argument and opinion do not constitute substantial evidence of a significant environmental effect. (Public Resources Code § 221080(e), §21082.2) See also above response to comment E6.

E13. Comment: Commenter asserts the environmental analysis of the Commission's proposed action is inadequate due to its failure to consider the adverse environmental effects of sewage sludge and effluent application as a result of the exemptions contained within the proposed regulation. (Wheelabrator Clean Water Systems, Inc., Bio Gro Division, March 27, 1996.)

Response: The environmental analysis of the proposed action considered the two projects which would be covered by exemption language, noting that they had already been approved. The analysis took into account the facts that each project had already been the subject of detailed analysis in a Final Environmental Impact Report prepared and certified for CEQA compliance; that each project had been approved by the lead agency subject to conditions and mitigation measures; and that the location and configuration of these projects, together with the required mitigation and additional limitations in required permits, would minimize any potential impact to resources of the Delta Primary Zone.

E14. Comment: Commenter asserts that the environmental analysis of the Commission's proposed action is inadequate because it failed to include a risk assessment analysis similar to that done for the U.S. EPA Part 503 regulations, taking into account concentrations of potentially harmful constituents in sewage sludge and sewage effluent and the specific impacts from these resulting concentrations. (Tri-TAC, April 3, 1996.)

Response: The comment seems to imply that a risk assessment analysis is required as part of an environmental analysis to meet CEQA requirements, but neither CEQA nor the Commission's certified program require that such an analysis be performed. The proposed action is intended to protect the natural resources and unique ecosystem of the Delta Primary Zone, recognizing that the U.S. EPA Part 503 regulations address only a limited number of the potentially harmful constituents typically contained in sewage sludge and do not address the potential for sewage sludge

disposal to result in adverse effects in the Delta Primary Zone, including, but not limited to, the build-up of metals, salinity, and chemical compounds in the soil; groundwater pollution from such materials; and public health concerns due to pathogens, nitrates, and chemical compounds. See also response to comment E2 above.

E15. Comment: Commenter asserts the environmental analysis of the Commission's proposed action is inadequate because it is based on assumptions and conjecture that sewage sludge and sewage effluent will be harmful to the unique resources of the Delta, not on scientific information. (Tri-TAC, April 3, 1996.)

Response: The environmental analysis of the proposed action, presented in the Staff Report and Revised Staff Report, describe the reasons for and the basis of the proposed action. Information contained in the administrative record of this proceeding, including for example the bibliography of material attached to the Staff Report as well as the information provided by numerous commenters, describes the adverse environmental effects that the proposed action is intended to avoid in order to protect unique Delta resources. See also response to comment E2.

E16. Commenter asserts that placement of biosolids in landfills will result from the Commission's proposed action and is a negative environmental impact because it is a waste of a fertilizer resource, a water resource, and landfill space. (Tri-TAC, April 3, 1996.)

Response: The comment is a general one, and it is not directly related to the proposed action of the Commission. The comment appears to assume that any placement of sewage sludge in a landfill constitutes an adverse environmental impact, and implies that the Commission's proposal would result in such practice. In fact, sewage sludge is currently placed in various landfills by various public agencies located outside the Delta Primary Zone. Public agency obligations under, and plans for compliance with, other laws requiring a reduction of the amount of waste which <u>is</u> currently directed to landfills would not be affected by this proposal. Less environmentally sensitive agricultural lands are available for sewage sludge disposal outside the Delta Primary Zone. See also responses to comments E6, E7, E8 and E17.

E17. Comment: Commenter asserts that the environmental analysis fails to recognize the potential for off-site impacts from the proposed regulatory action, i.e., the propagation of myths and increased fears over use of sewage sludge and effluent, which will make recycling more difficult and lead to increased disposal of biosolids in landfills. (Tri-TAC, April 3, 1996.)

Response: The environmental analysis of the proposed action addresses the potential for the proposal to result in significant adverse environmental impacts, i.e., one or more substantial

adverse changes in the existing physical conditions of the area affected by the proposal. (Public Resources Code §21060.5 and §21068.) The proposed action is intended to protect Delta Primary Zone resources. The comment is a general one which seems to argue or to speculate, first, that the proposed action will cause fear; second, that such fear will make recycling more difficult; and third, that there will be a general increase in the amount of sewage sludge disposed at unidentified landfills. The Commission's environmental analysis is not required to speculate on possible future actions and projects of other agencies, whose impacts cannot be identified and analyzed. Unsupported speculation does not constitute substantial evidence of a potentially significant adverse environmental impact to be addressed in the Commission's analysis. (Public Resources Code §21080(e), §21082.2.) Also, see above responses to comments E6, E7, E8, and E16.

Declaration of Ruben A. McDavid before the Board of Directors of the Irvine Ranch Water District, 12/5/95

Applied and Environmental Microbiology, Palmer et al, "Detection of Legionella Species in Reclaimed Water and Air with the EnviroAmp Legionella PCR Kit and Direct Fluorescent Antibody Staining", 2/95

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